

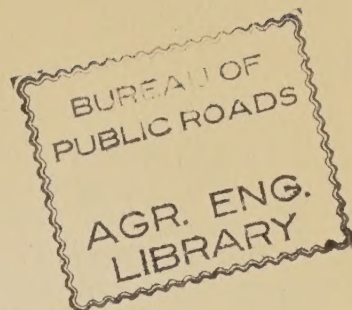
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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief

MONTHLY NEWS LETTER



WASHINGTON, D.C., OCTOBER 21, 1929

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: ALL ENGINEERS REPORTING TO THE WASHING- :
: TON OFFICE ARE REMINDED THAT REPORTS SHOWING :
: PROGRESS OF WORK ARE TO BE PREPARED AND FOR- :
: WARDERD TO THIS OFFICE EACH WEEK. :
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: THE NEW FORMS FOR TRAVELING EXPENSES :
: (STANDARD FORM No. 1012) RECENTLY SENT OUT :
: MUST BE USED EXCLUSIVELY HEREAFTER. ALL THE :
: OLD FORMS ON HAND SHOULD BE DESTROYED. :
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: THE FOLLOWING ARE QUARTERLY REQUISIT- :
: ITION NUMBERS FOR THE SECOND QUARTER OF THE :
: FISCAL YEAR 1930. GASOLINE, OIL AND GREASE :
: A.E. 123. REPAIR AND UPKEEP TO MOTOR VEHICLES :
: AND TRACTORS, INCLUDING GARAGE RENT A.E. 124. :
: REPAIR TO ENGINEERING EQUIPMENT AND OFFICE :
: EQUIPMENT A.E. 125. MISCELLANEOUS FIELD ENGI- :
: NEERING EQUIPMENT AND SUPPLIES A.E. 126. THE :
: APPROPRIATE NUMBER SHOULD BE PLACED ON EACH :
: VOUCHER SUBMITTED. :
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: TIRE AND TUBE REQUISITIONS ARE DUE IN :
: WASHINGTON BEFORE THE FOLLOWING DATES. 4TH :
: QUARTER JANUARY 17. 1ST QUARTER APRIL 17. :
: THE CONSOLIDATED REQUISITION IS SENT FORWARD :
: FROM THE BUREAU ON THE 18TH. ORDERS RECEIVED :
: THEREAFTER ARE SPECIAL QUANTITY ORDERS AT IN- :
: CREASED PRICES. :
:.....

PLANS ARE BEING PERFECTED TO HOLD ON NOVEMBER 7 AN EXHIBIT AND DEMONSTRATION OF MECHANICAL APPLIANCES THAT HAVE BEEN DEVELOPED FOR CONTROLLING THE SPREAD OF THE EUROPEAN CORN BORER. THIS WILL BE HELD ON THE GOVERNMENT EXPERIMENTAL FARM NEAR TOLEDO, OHIO AND INVITATIONS TO ATTEND HAVE BEEN SENT TO THE NATIONAL ASSOCIATION OF FARM EQUIPMENT MANUFACTURERS, MANUFACTURERS OF FARM IMPLEMENTS, HEADS OF COLLEGE DEPARTMENTS OF AGRICULTURAL ENGINEERING AND A NUMBER OF INDIVIDUALS WHO HAVE SHOWN AN ESPECIAL INTEREST IN THE SUBJECT. THE PURPOSE OF THESE DEMONSTRATIONS IS TO GIVE VISUAL EVIDENCE OF WHAT HAS BEEN ACCOMPLISHED AND THEREBY ENLIST FURTHER COOPERATION IN THE WORK. THERE WILL BE DEMONSTRATED ALL TYPES OF APPLIANCES AND MECHANICAL METHODS THAT HAVE PROVED EFFECTIVE IN COMBATING THE SPREAD OF THE BORER.

O.V.P. STOUT HAS FURNISHED THE FOLLOWING NOTES CONCERNING A MANUSCRIPT RECENTLY PREPARED BY HIMSELF AND CARL ROHWER ON THE SUBJECT "SEEPAGE OF WATER FROM CHANNELS. EXPERIMENT AND SPECULATION CONCERNING CERTAIN INFLUENTIAL FACTORS AND CONDITIONS."

THE REPORT CONSISTS OF AN ANALYSIS OF A CONSIDERABLE VOLUME OF FIELD DATA OBTAINED IN CALIFORNIA IN 1922 AND 1923. THE DATA STUDIED INCLUDE OBSERVED RATES AS FOLLOWS:

SEEPAGE AT A POINT IN A CANAL BED, AS INDICATED BY A DEVICE DESIGNATED AS A SEEPAGE CUP, EVOLVED AND USED FOR THIS PURPOSE. SINKAGE OF THE WATER SURFACE IN ELONGATED POOLS OF STILL WATER FORMED IN SECTIONS OF CANAL CHANNEL. SEEPAGE THROUGH THE VERTICAL SIDES OF SMALL TRENCHES, AS COMPARED WITH THAT THROUGH THEIR HORIZONTAL BOTTOMS.

A FEATURE PUT PROMINENTLY FORWARD IN THE STUDY IS THE CONCEPT OF A REGION OF SATURATED SOIL IMMEDIATELY BENEATH A SEEPAGE CHANNEL. THE HYDROSTATIC PRESSURE IS POSITIVE AT ANY POINT WITHIN THIS REGION AND ZERO AT ANY POINT ON ITS EARTH BOUNDARY. FLOW THROUGH THE REGION TAKES PLACE IN CONFORMITY WITH THE LAWS OF HYDRODYNAMICS AND IS CHARACTERIZED BY STREAM LINES AND LINES OF EQUAL ELEVATION OF HYDRAULIC GRADIENT.

THE PLOTTED POINTS REPRESENTING THE TIME-SINKAGE OBSERVATIONS ON THE WATER SURFACE IN POOLS CONFORM IN REMARKABLE DEGREE TO THE CURVE OF AN EQUATION OF MIXED EXPONENTIAL TYPE. THE EQUATION WAS FIRST DERIVED ON A RATIONAL BASIS TO APPLY TO SINKAGE IN THE SEEPAGE CUP, THEN WAS APPLIED EMPIRICALLY TO SINKAGE IN POOLS. FINALLY IT WAS FOUND THAT, CONDITIONED ON THE TRUTH OF AN APPARENTLY REASONABLE HYPOTHESIS AS TO THE MANNER IN WHICH FLOW TAKES PLACE THROUGH THE REGION OF PRESSURE IN THE SOIL, THE EQUATION CAN BE RATIONALIZED IN ITS APPLICATION TO SINKAGE IN POOLS.

R.G. HEMPHILL REPORTS AS FOLLOWS CONCERNING THE GROWTH OF THE CITRUS INDUSTRY IN TEXAS, AS SHOWN BY A CENSUS OF GROWING TREES MADE BY AGENTS OF THE DEPARTMENT IN CONNECTION WITH THE QUARANTINE OF THE DISTRICT ON ACCOUNT OF THE MEXICAN FRUIT FLY. THE TOTAL NUMBER OF TREES IS 5,118,981. ESTIMATED ON THE CONSERVATIVE BASIS OF 100 TREES TO THE ACRE, THIS INDICATES A TOTAL OF MORE THAN 51,000 ACRES. ABOUT 72 PER CENT ARE GRAPE-FRUIT, 26 PER CENT ORANGES, AND 2 PER CENT LEMONS, LIMES, AND OTHER VARIETIES. THERE ARE 1,699,000 TREES LESS THAN 1 YEAR OLD, AND 712 TREES 5 YEARS OLD OR MORE.

D. W. BLOODGOOD REPORTS THAT THE LEAF WORM AND CORN EAR WORM HAVE PLAYED HAVOC WITH THE PRODUCTION OF COTTON IN THE VICINITY OF STATE COLLEGE, NEW MEXICO, AND IT IS ESTIMATED THE DECREASE WILL RANGE FROM 33 TO 40 PER CENT OF THE NORMAL YIELD. A LITTLE OVER 6,000 ACRES HAVE BEEN DUSTED FROM AN AIRPLANE. IN MANY OF THE FIELDS ONLY THE BOLLS AND STALKS REMAIN. ALL THE COTTON IS SLOW IN MATURING.

A. L. FELLOWS HAS RETURNED TO BERKELEY FOLLOWING THE COMPLETION OF HIS ASSIGNMENT AS CONSTRUCTION ENGINEER ON THE COLD SPRINGS CREEK DAM IN THE WIND CAVE NATIONAL PARK, S. D., WHICH WORK WAS DONE BY THE U. S. BIOLOGICAL SURVEY.

DR. SAMUEL FORTIER HAS COMPLETED A REVISION OF HIS FARMERS' BULLETIN ON IRRIGATION OF ALFALFA.

M. R. LEWIS SUBMITTED A PROGRESS REPORT ON FLOOD CONDITIONS ON THE COQUILLE RIVER, OREGON.

ACTUAL CONSTRUCTION WORK ON THE MIGRATORY BIRD REFUGE AT THE MOUTH OF BEAR RIVER, UTAH, STARTED IN SEPTEMBER.

W. W. McLAUGHLIN ADDRESSED THE OREGON RECLAMATION CONGRESS AT ONTARIO SEPTEMBER 16-18 ON THE SUBJECTS OF "WORK OF THE DIVISION OF AGRICULTURAL ENGINEERING OF INTEREST TO OREGON IRRIGATION," ALSO ON "DEPTH OF DRAINS IN RELATION TO PLANT GROWTH."

FRED C. SCOBEE SPOKE BEFORE THE SACRAMENTO SECTION OF THE A. S. C. E. AT THEIR LUNCHEON SEPTEMBER 17. HIS SUBJECT WAS "UNUSUAL FLOW CONDITIONS IN WATER CONDUITS AND THEIR INFLUENCE ON CARRYING CAPACITY."

NINE STATE COLLEGES NOW SUPPLEMENT THEIR OWN FARM BUILDING PLANS WITH PLANS BASED ON DESIGNS PREPARED BY OUR DIVISION. A VANDYKE NEGATIVE OF OUR TRACING IS FURNISHED THE COLLEGE ON WHICH THE NAME OF THE STATE INSTITUTION APPEARS TOGETHER WITH THE STATEMENT THAT THE DESIGN WAS MADE BY THE DIVISION OF AGRICULTURAL ENGINEERING. THIS ARRANGEMENT REDUCES THE NUMBER OF BLUEPRINTS SENT OUT BY THE DIVISION AND AT THE SAME TIME IT AFFORDS THE COLLEGES A WIDER CHOICE OF PLANS WITHOUT THE EXPENSE OF PREPARING THE TRACINGS. TO DATE 450 VANDYKES HAVE BEEN SENT OUT UNDER THIS PLAN.

MR. McCORRY SPENT SEPTEMBER 25 TO 28, INCLUSIVE, AT TOLEDO, IN CONNECTION WITH THE CONFERENCE OF THE JOINT COMMITTEE ON THE EUROPEAN CORN BORER. FIELD TRIPS WERE MADE THROUGH THE BADLY INFESTED COUNTIES OF OHIO, LABORATORIES AND EXPERIMENTAL FARMS WERE VISITED IN OHIO AND MICHIGAN, AND FIELDS IN THE BADLY INFESTED COUNTIES OF ESSEX AND KENT IN CANADA WERE INSPECTED. THE THIRD DAY WAS DEVOTED TO DRAFTING UP AND MAKING FINAL COMMITTEE REPORTS. SOME FIFTY WORKERS, INCLUDING CANADIAN REPRESENTATIVES, WERE PRESENT.

MR. McCORRY ALSO REVIEWED THE WORK BEING CARRIED ON BY THE TOLEDO AGRICULTURAL ENGINEERS OF THIS DIVISION, TENDING TOWARD FURTHERING THE CONTROL OF THE CORN BORER BY MECHANICAL MEANS.



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